

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

HUAWEI TECHNOLOGIES CO. LTD.,

Plaintiff,

v.

**T-MOBILE US, INC. and T-MOBILE
USA, INC.,**

Defendants,

**NOKIA SOLUTIONS AND NETWORKS
US LLC and NOKIA SOLUTIONS AND
NETWORKS OY,**

**TELEFONAKTIEBOLAGET LM
ERICSSON and ERICSSON INC.,**

Intervenors.

Civil Action No. 2:16-cv-0057-JRG-RSP

JURY TRIAL DEMANDED

HUAWEI'S OPENING CLAIM CONSTRUCTION BRIEF

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Plaintiff Huawei is one of the world's leading developers and manufacturers of the network equipment that runs today's high-speed LTE cellphone networks.¹ As a result of its substantial investments in innovation, Huawei and its affiliates have developed a patent portfolio of over 50,000 issued patents worldwide. Huawei's patented innovations reflect Huawei's leadership in developing worldwide telecommunications standards, including those offered by the leading standards organization "dealing with telecommunications, broadcasting and other electronic communications networks and services."² The three Huawei patents asserted here against network provider T-Mobile are essential to the standards that T-Mobile must practice to provide its national cellphone services.

Specifically, U.S. Patent Nos. 8,625,527 ("the '527 patent"); 9,060,268 ("the '268 patent"); and 9,241,261 ("the '261 patent") are each declared essential to standards used by the telecommunications industry. Their claims contain language that, although readily understood in the industry, would benefit from constructions that lend full meaning to the terms to clarify the inventions covered by the claims. Huawei's proposed constructions provide this clarity, whereas Defendants' proposed constructions either add unnecessary words or read out essential claim limitations. Accordingly, Huawei respectfully requests that the Court adopt Huawei's proposed constructions.

I. Technology Overview

A. Wireless Telecommunication Networks and Their Use

At a high level, a wireless telecommunications system involves two primary components: (1) a Public Land Mobile Network (PLMN); and (2) wireless devices (e.g.,

¹ <http://www.huawei.com/en/about-huawei>.

² <http://www.etsi.org/about/what-we-are>. See also <http://www.3gpp.org/about-3gpp/about-3gpp>.

smartphones and tablets). Generally, the “PLMN” includes an access network (base stations or towers) and a core network. The PLMN (the focus of Huawei’s asserted patents) manages both the connected wireless devices and the movement of data between them and external networks such as the Internet or the Public Switched Telephone Network (PSTN), which is used to connect callers with the traditional international phone system.

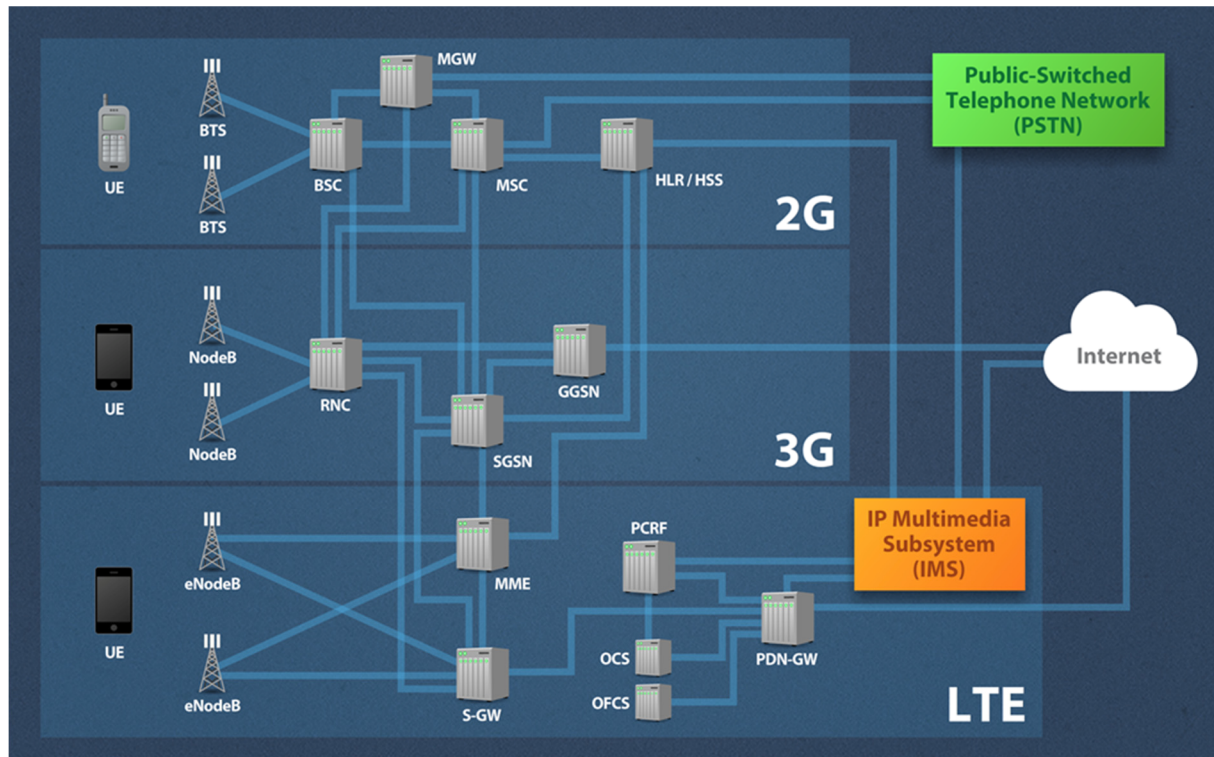
To use a wireless network, a phone or other wireless device first establishes wireless communication with a tower, or base station, which is part of the access network. It next exchanges a series of “control” or “signaling” messages with the base station. For example, the phone identifies itself via its subscriber ID (often contained in a Subscriber Identity Module (SIM card) inserted in the phone), and asks permission to use the network. In turn, the base station consults with components in the core network to determine whether the phone is authorized to use the network at all, and if so, under what terms (*e.g.*, whether the user is on its “home network” or whether it is roaming).

The phone can now establish a voice or data session and exchange data with the network. The actual voice or data travels over the air interface to the base station, then through the core network equipment using a set of resources assigned for that user. The voice information or other data travels through various components in the core network and the operator’s packet network to the Internet, another telecom operator’s packet network, or the PSTN.

B. LTE, 3G, and 2G Networks

LTE stands for Long-Term Evolution, and is also commonly known as a “4G” network. Its predecessors are known as the “3G” and “2G” networks (short for “third-generation” and “second-generation,” respectively). LTE, 3G, and 2G, like all widely adopted telecommunications systems, operate according to a set of standards adopted by a standards body,

in this case, the 3rd Generation Partnership Project (3GPP).³ The standards define behaviors of and interfaces among a number of network entities, certain of which are shown in the following diagram and described below, with an emphasis on the LTE network:



- UE (User Equipment)
 - Ordinary consumer products that can access the telecommunications network – mobile phones, smartphones, tablets, etc.
- eNodeB (Evolved Node B)
 - The base station or “tower”
 - Part of the access network
 - Communicates wirelessly with UE to connect users to the core network
- MME (Mobility Management Entity)
 - The MME stores information about each UE connected to the network and is responsible for mobility management of the control plane, including user context and mobility status management, user temporary identity allocation, and so on.
 - When a UE is moving and switches, *e.g.*, from one base station (tower) to another, the MME facilitates maintaining the UE’s connection to the network (voice and/or data) during the switch. MMEs store information about UEs in

³ The European Telecommunications Standards Institute (ETSI), of which Huawei is a member, is one of the seven standards development organizations that works to promulgate 3GPP standards.

constructs known as “Mobility Management Contexts” or “MM Contexts.” The MME can share Mobility Management Contexts to other entities to enable this exchange.

- IMS (IP Multimedia Subsystem)
 - Architectural framework for delivering IP multimedia services
 - Includes Call Session Control Function (CSCF) nodes and the HSS (described below)
 - Facilitates the use of IP for packet communications such as traditional telephony, fax, e-mail, Internet access, Web services, Voice over IP, instant messaging, videoconference sessions, and video on demand.
- HSS (Home Subscriber Server)
 - Stores subscriber information
 - Communicates with other nodes to support network access

C. Huawei’s Standard Essential Patents

The asserted patents claim systems and procedures that enable mobile devices (or “User Equipment” or “UE”) to switch between a 4G network and older 3G or 2G networks.

A challenging aspect of wireless telecommunications systems design is that it should allow UEs to remain functional as they travel through space. So long as a mobile phone remains in an area covered by its network provider, the phone can travel within that area and remain functional. A mobile phone is normally connected to a base station that offers the strongest connection, which is generally the base station that is geographically closest. As that mobile phone moves away from that base station – *e.g.*, if the mobile phone is travelling in a car – its connection weakens, and another base station may offer a stronger connection. Thus, the mobile phone will sever its connection to the original base station and replace it with a connection to the new base station. The ability to generate new connections to the network and sever old ones, while still enabling users to place, receive, and continue calls without delay, was not a trivial problem to solve.

Supporting mobility becomes even more challenging when one considers that the technology that enables access to the core network is not uniform. Wireless telecommunication networks have evolved over the years via successive generations – *i.e.*, 2G, 3G, and 4G LTE

technology. As telecommunication systems mature, older, or legacy, networks are gradually replaced by the latest telecommunication technology. Newer generation networks can be very different from the old. 4G LTE networks operate using equipment, software, and protocols that are simply not found in legacy networks, and vice-versa. Although 4G LTE coverage is continually expanding, many areas of the country are still covered by older 2G or 3G networks. Thus, for a mobile phone to remain functional throughout a provider's entire coverage area, it must be able to switch between 4G networks and older 2G or 3G networks. Given that these networks may be built on different technology, offering this mobility is complex. Huawei's asserted patents permit this functionality.

1. The '527 Patent

The '527 patent claims systems and methods that allow "handovers" between 4G and 2G or 3G systems. Handover procedures ensure that the UE connection is maintained as the UE moves from one cell or radio network to another. They allow the phone conversation to continue uninterrupted as a user moves. Handovers enable phones to disconnect from an old system and reconnect to a newer system without dropping or disrupting the call. The patent teaches that the continuity of a voice session (or "session continuity") may be achieved by strategically establishing and severing connections between certain components at certain moments in time.

2. The '268 and '261 Patents

The '268 and '261 patents claim systems and methods that enable "idle state" or "idle mode" mobility between 4G LTE and legacy networks. When a mobile phone is *not* engaged in a call, the phone is said to be in "idle mode" or "idle state." One of the challenges to supporting UE mobility is security. Consumers should be reasonably confident that the content of their communications will not be intercepted. The network operator should also be confident that it

provides access only to authorized consumer devices. Thus, when a UE connects to an access network, it must first establish a secure connection. When that UE moves to a different access network, which consists of different hardware, security must be maintained. Thus, the solutions in the '268 and '261 patents were developed to enable security negotiations between 4G LTE and legacy networks. The patents largely claim two sides of the same coin: the '268 patent permits a UE to move securely from a 4G LTE network to a 2G or 3G network and the '261 patent permits a UE to move securely from a 2G or 3G network to a 4G LTE network.

II. Disputed Terms and Proposed Constructions of the '527 Patent

| Asserted Claims | Term | Huawei's Construction | Defendants' Construction |
|----------------------------------|---|------------------------------|--|
| Claims 1, 12, 13, 29, 36, 37, 41 | "[a/the] handover condition is satisfied" | "[a/the] handover is needed" | "Requirement for performing a handover is met" |

A "handover condition" generally refers to the condition precedent to a handover – if this condition is satisfied, a handover should and will take place shortly thereafter. *See, e.g., Ex. A, '527 Patent at 10:10-13* ("[W]hen the handover condition is satisfied, the Handover Detection Function triggers the handover."). For example, where a UE moves away from the cell or radio network to which it is currently connected, the strength of its connection to that cell or radio network may degrade to the point that the UE needs to handover to another cell or radio network with a stronger signal. *See id.* at 11:9-13. Thus, Huawei's construction reflects that when a handover condition is satisfied, a handover is needed.

Construction for this term is necessitated by Defendants' invalidity contentions, which allege this term is satisfied by multiple pieces of prior art that can only detect in hindsight that a handover has occurred. In other words, Defendants need this term to be flexible enough to

cover a system that merely infers a handover condition was previously satisfied because it realizes that at some point in the past a handover occurred.

This strained interpretation ignores the very title of the patent stating a purpose of the invention to “maintain[] session continuity.” *Id.* at Title. Indeed, the patent teaches that “the method and system provided by the present invention may logically replace an original session connection established before a handover with a new session connection established after the handover to **guarantee** the session continuity.” *Id.* at 4:41-45 (emphasis added). To create the new connections in time to guarantee session continuity, the invention therefore must not merely realize that a handover **has occurred** – it must know that a handover **needs to occur** so it can proactively coordinate the handover process. The patent teaches exactly that: “The Handover Detection Function is used for detecting whether the handover condition is satisfied and triggering a handover when the handover condition is satisfied.” *Id.* at 8:57-59. The patent thus makes clear that the invention detects that a handover condition is satisfied before the handover occurs – in other words, that a handover is needed, as Huawei proposes.

| Asserted Claims | Term | Huawei’s Construction | Defendants’ Construction |
|--|--|--|---|
| Claims 1, 7, 9, 10, 12, 14, 17, 19, 27, 29, 31, 36, 37, 41 | “Handover Anchor Function” / “HOAF” | Not a claim term. See “HOAF-CP” and “HOAF-UP.” | “module for handover that separates two connections and supports segmented exchange between the first user and the second user” |
| Claims 1, 7, 9, 10, 12, 14, 17, 19, 27, 29, 31, 36, 37, 41 | “Handover Anchor Function-Control Plane (HOAF-CP)” | Plain meaning | “HOAF for the control plane” |
| Claims 1, 14, 29, 41 | “Handover Anchor Function-User Plane” / “HOAF-UP” | Plain meaning | “HOAF for the user plane” |

“HOAF” does not appear in the ’527 patent claims—HOAF-CP and HOAF-UP do. The specification is clear that HOAF-CP and HOAF-UP are two subcomponents of HOAF. Defendants therefore ask the Court to construe a term not recited in any claim. The term “HOAF” does prominently appear, however, in one of Defendants’ prior art references. The Court should decline Defendants’ invitation to construe this non-claim term.

Regarding the two terms actually recited in the ’527 patent claims, no construction is required for “HOAF-CP” and “HOAF-UP” because the claims themselves adequately define these terms. Each of the words comprising these acronyms is understood by those of skill in the art. For example, as described herein at Section I.C, “handover” is a well-known term of art in telecommunications. A “user plane” is a connection that carries user traffic—i.e., content such as voice or data. A “control plane” carries signaling traffic—i.e., messages that manage how and where user traffic gets sent. The remainder of the claims recites additional details that inform the reader about the nature of the HOAF-CP and HOAF-UP terms. For example, Claim 1 recites that a first control plane connection is established between the Handover Source Function (HOSF) and the HOAF-CP, and a control plane connection is established between the HOAF-CP and the terminal side of the second user, and a session is established using those two connections. Ex. A, ’527 Patent at 42:20-32. Claim 1 further recites that after a handover condition is satisfied, a second control plane connection is established between the Handover Destination Function (HODF) and the HOAF-CP, and the session is continued using the new second control plane connection and the already-existing control plane connection between the HOAF-CP and the terminal side of the second user. *Id.* at 42:32-45.

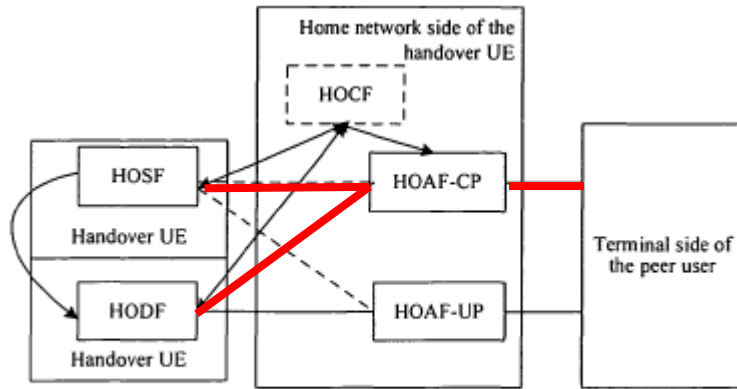


Figure 3C2

Id. at Fig. 3C2 (annotated to identify the first control plane connection, second control plane connection, and the control plane connection between the HOAF-CP and terminal side of the second user).⁴ By reciting connections between the HOAF-CP and HOAF-UP and other claimed elements, the patent claims necessarily define these terms.

Defendants’ proposed constructions for “HOAF-CP” and “HOAF-UP”, which both incorporate its sub-construction for the non-claim term “HOAF” above, are both unnecessary and incorrect. First, Defendants replace the word “function” with “module.” The patent does not equate the two. Second, the proposed constructions seek to require the HOAF-CP and HOAF-UP to “support[] segmented exchange between the first user and second user.” Importantly, this language is not used in the patent at all, much less in a definitional way that might justify importing it into the claim as Defendants urge. Beyond that, instead of clarifying, the proposed constructions unnecessarily raise questions without resolution: What is a “segmented exchange” and what does it mean to “support” such exchange? Therefore, Defendants’ construction must be rejected in favor of plain meaning.

⁴ While only connections related to the HOAF-CP are illustrated by the figure and discussed by the previous paragraphs, the same logic applies to the HOAF-UP term.

| Asserted Claims | Term | Huawei's Construction | Defendants' Construction |
|------------------------|---|------------------------------|---|
| Claim 1 | "user plane first connection between the HOSF and a Handover Anchor Function-User Plane (HOAF-UP) of the second user" | Plain meaning | "end-to-end connection for the user plane from the HOSF to the second user's HOAF-UP" |
| Claim 29 | "HOAF-UP is configured to establish the user plane first connection between the HOSF and the HOAF-UP" | Plain meaning | "HOAF-UP is configured to establish an end-to-end connection for the user plane from the HOSF to the HOAF-UP" |

Defendants' proposed construction for these terms attempts to import the limitation that the connection must be "end-to-end." The remainder of Defendants' proposed construction simply restates the original term. There is, however, no basis for adding the "end-to-end" limitation into the claim.

Defendants' proposed constructions should additionally be rejected because they would be confusing to the jury. As explained in the above overview of the technology and asserted patents, UEs are not "directly" connected to each other, but instead connect to each other through a host of intermediary components. By requiring that the connections of these claim terms be "end-to-end," Defendants may be seeking to develop a non-infringement argument whereby one UE must communicate directly to another UE with no intervening components connecting the two. Such a contention contradicts fundamentals of the telecommunications industry. Thus, the Court should reject Defendants' proposed constructions.

| Asserted Claims | Term | Huawei's Construction | Defendants' Construction |
|---|-------------------------------------|--|---|
| Claims 1, 9, 12, 13, 18, 27, 29, 31, 41 | "Handover Source Function" / "HOSF" | "Handover source function represented by a different access address or access means from the Handover Destination Function (HODF)" | "Module of first user terminal before handover" |

| | | | |
|---|--|--|--|
| Claims 1, 9, 10, 12, 13, 14, 17, 18, 19, 27, 29, 31, 36, 37, 41 | “Handover Destination Function” / “HODF” | “Handover destination function represented by a different access address or access means from the Handover Source Function (HOSF)” | “Module of first user terminal after handover” |
|---|--|--|--|

Huawei’s proposed constructions promote clear understanding of one aspect of the HOSF and HODF: that each is “represented by a different access address or access means” than the other. This construction is squarely supported by the ’527 specification: “With respect to the network which performs the handover, the HOSF and the HODF are represented by different access addresses or access means.” Ex. A, ’527 Patent at 14:8-10.

Huawei’s proposed constructions are unambiguous. The patent provides adequate background on “access addresses” and “access means,” with reference to well-defined telecommunication terminology. When a UE connects to a particular base station, it is given a particular access address. That access address will change if that UE engages in a handover to a new base station. *See id.* at 3:19-33 (explaining that changing a user’s “Access Point,” in turn changes a user’s access address), 4:37-45. “Access means” refers to the protocols that allow the UE to engage in a voice or data session. Legacy networks use different access means from 4G LTE networks.⁵

Defendants’ proposed construction again attempts to improperly substitute the claim term “function” with the word “module.” As discussed in the section regarding the HOAF-CP and HOAF-UP terms, this substitution lacks justification. Further, Defendants’ construction

⁵ *See* Ex. A, ’527 Patent at 7:14-17 (identifying “interworking access to the IMS from the CS domain” and “direct access to the IMS through varieties of IP access networks” as different access means). Generally, 2G and 3G networks operate using circuit-switched technology (“CS domain”), which uses dedicated pathways to route a continuous stream of user traffic from source to destination. 4G LTE networks operate using packet-switched technology (“PS domain”), which divides user traffic into discrete chunks (or “packets”) and routes each of those packets using whichever path is most efficient.

raises a timing-related ambiguity: What does it mean for the HOSF to be a “module . . . before handover” and the HODF to be a “module . . . after handover”? Does the HOSF cease to be a module after handover? Was the HODF a module before the handover or did it simply not exist? The Court should avoid these ambiguities and reject Defendants’ constructions.

| Asserted Claims | Term | Huawei’s Construction | Defendants’ Construction |
|------------------------|--------------------------------------|-----------------------|---------------------------------|
| Claims 2, 7, 9, 18, 31 | “Handover Control Function” / “HOCF” | Plain meaning | “Module that controls handover” |

Defendants’ proposed construction here simply restates the claim term, except for yet again substituting “module” for “function.” Setting that improper substitution aside, Defendants otherwise tacitly admit that no construction is required. A widget “that controls handover” is no different from a “handover control” widget.

| Asserted Claims | Term | Huawei’s Construction | Defendants’ Construction |
|------------------|---|---|---|
| Claims 1, 29, 41 | “terminal side of a second user” / “terminal side of the second user” | “the second user’s User Equipment (UE) and any interworking gateway and associated connections required for the second user to access a network, for example, IMS, NGN, CS or PSTN” | “From ’527 patent specification: when the second user accesses to the IMS/NGN via different IP access networks, the terminal side of the second user refers to the second User Equipment (UE); when the second user is located in the circuit switched (CS) domain/PSTN, the terminal side of the second user includes the second UE, an interworking gateway for interworking with the network where the second user are located, and a CS connection between the second UE and the interworking gateway” |

It is not clear to what degree there actually is a dispute regarding this term, as the parties' constructions share common language and are conceptually similar. Both parties recognize that the patent describes the "terminal side of the peer [i.e., second] user" at Column 7, lines 52-61 using the language that Defendants quote in their construction. Huawei believes, however, that substituting a 79-word construction for a six-word term does not clarify the term. Thus, Huawei's construction condenses this language down to its essence. Huawei invites Defendants to engage in a productive discussion about a potential compromise construction for this term.

III. Disputed Terms and Proposed Constructions Common to the '268 and '261 Patents

The parties appear to agree that the claim terms common to the '268 and '261 patents should share the same construction. Sharing common constructions is not surprising given the similarities of these patents, such as having the same inventor, having been first filed at roughly the same time, and having been declared essential to the same 3GPP specification, TS 33.401. Indeed, these patents generally address two sides of the same coin: idle mode mobility of a UE moving from an LTE network to a 2G or 3G network ('268), and from a 2G or 3G network to an LTE network ('261).

| Asserted Claims | Term | Huawei's Construction | Defendants' Construction |
|---|----------------------------------|--|--|
| Claims 1, 2, 3 of the '268 Patent Claims 1, 9, 17 of the '261 Patent | "idle [mode/state]" ⁶ | "[mode/state] in which the User Equipment does not have an active voice or data connection with the network" | "a [mode/state] in which the UE is not currently sending or receiving user data" |

The dispute over this claim term focuses on whether a UE operating in "idle mode" at a given moment in time (1) *merely happens* not to be sending or receiving user data, as

⁶ Although the '268 patent recites an "idle mode" whereas the '261 patent recites an "idle state," the difference between these claim terms appear to be purely semantic and not substantive. The parties have not identified any difference in idle "mode" or idle "state" thus far. This brief uses the terms interchangeably.

Defendants propose, or (2) has no active voice or data connection with the network and thus is *incapable* of sending or receiving user data without first establishing such a connection, as Huawei proposes. Because the '261 and '268 patents are both explicitly directed to idle mode mobility, this claim term is particularly important to understanding these patents. Huawei's proposed construction is consistent with the intrinsic evidence and more faithful to the accepted meaning of "idle mode."

"Idle mode" has a well-known meaning in telecommunications, and the '268 and '261 patents use this term consistent with that meaning. *See* Ex. D, '268 Patent Prosecution History, Sept. 20, 2013 Response to Office Action at 11 n.1 (explicitly relying on the 3GPP definition for "idle mode" to explain this term). As explained in a 3GPP specification that provides an overview of the E-UTRAN radio interface (a technology under the LTE umbrella), UEs connect to eNodeBs in part through a Radio Resource Control (RRC) protocol. Ex. E, TS 36.300 V8.0.0 at 11-12. A UE can be in one of two RRC states: "RRC_CONNECTED" or "RRC_IDLE." *See* Ex. F, TS 36.331 V0.1.4 at 9-10. The "RRC_IDLE" RRC state reflects the "idle mode" to which the patents refer. In the connected state, the UE has an E-UTRAN-RRC connection and "can transmit and/or receive data to/from" the network. TS 36.300 V8.0.0 at 35; *see also* TS 36.331 V0.1.4 at 9-10. In the idle state, only "broadcast/multicast" data is transferred, which the UE uses to detect incoming calls. TS 36.331 V0.1.4 at 9-10 ("The UE "[m]onitors a Paging channel to detect incoming calls."); *see also* TS 36.300 V8.0.0 at 35. In idle mode, there is no RRC connection, and thus no voice or user data can be transmitted. The '268 and '261 patents use "idle state" and "idle mode" consistently with this well-understood meaning. *See, e.g.,* Ex. B, '268 Patent at 1:23-38 ("When the UE [is] in an idle state . . ."); *id.* at 4:1-4, 6:51-54; Ex. C, '261 Patent at 1:32-35; 1:64-65; 4:39-40.

UEs in idle mode have a special mobility process, known as “cell reselection.” TS 36.331 V0.1.4 at 9-10. Cell reselection is different from the mobility process that occurs when the UE is in an active voice or data session, known as a handover. *Id.*; *see also* TS 36.300 V8.0.0 at 40-44 (describing principles of cell reselection and handovers). The inventions embodied in the ’268 and ’261 patents solved security issues specific to the cell reselection and idle mode mobility context between networks of different types.

The ’268 patent prosecution history confirms the patentee interpreted “idle state” in accord with its well-known meaning, no connection exists. When faced with the same type of handover-related prior art that Defendants assert in this case, the applicant repeatedly and explicitly distinguished the two:

Vialen at page 2, lines 1-2, in paragraph [0015], discloses that *a connection between a UE and a radio network already exists, and it means that the UE is **not** in an idle mode.* In contrast, in amended claim 20, the UE is in an idle mode.

Ex. D, ’268 Patent Prosecution History, Nov. 24, 2014 Amendment at 9 (all emphasis in original).

claim 1 of the subject application. In fact, Applicant respectfully submits that because *Vialen* focuses on communication **handover** (i.e., in an **active mode** or state) before the advent of **LTE technology**, *Vialen* cannot possibly disclose or suggest that *based on the determined **idle mode** of the UE, obtaining, through communicating with a Mobility Management Entity (MME), Authentication Vector (AV)-related keys deduced according to a root key of the MME*”, as rectified, *inter alia*, in claim 1.

Id., Nov. 16, 2012 Amendment at 12 (all emphasis in original). The ’261 and ’268 inventor thus made clear that an “active mode or state,” in which a UE already has a connection to a radio network, is different from the claimed “idle mode” or “idle state” in LTE, where the UE has no such connection.

Moreover, the applicant *explicitly relied upon* 3GPP definitions related to idle mode when explaining the '268 patent to the Examiner during prosecution. *See* '268 Patent Prosecution History, Sept. 20, 2013 Response to Office Action at 11 n.1 (referring the Examiner to the “idle mode” and “RRC connection” definitions in TR 21.905 V7.0.0 (2005-09)). The cited definitions are consistent with Huawei’s interpretation. TR 21.905 V7.0.0 defines “idle mode” as the “state of UE switched on but which does not have any established RRC connection” and “RRC connection” as “[a] point-to-point bi-directional connection between RRC peer entities on the UE and the UTRAN sides, respectively.” Ex. G at 13, 22.

Defendants’ proposed construction confuses the true nature of active and idle modes/states. The UEs of two individuals engaged in a voice call are both in active mode. If the jury interprets “user data” to encompass only user voices, and not background noise, Defendants’ construction suggests that these active mode UEs momentarily revert to idle mode whenever there is a conversational lull or long pause. The UEs, however, remain in active mode and do not momentarily revert to idle mode whenever there is such a pause. The UEs remain in active mode until a connection between the UE and the network ceases to exist. Defendants’ proposed construction is inadequate and should be rejected.

| Asserted Claims | Term | Huawei’s Construction | Defendants’ Construction |
|---|------------------------------------|---|--------------------------------|
| Claims 1, 2, 3 of the '268 Patent Claims 1, 9, 17 of the '261 Patent | “mobility management entity (MME)” | “element in a Long-Term Evolution (LTE) network that manages the mobility of User Equipment (UE)” | “server that manages mobility” |

A “mobility management entity” or “MME” is a well-known network entity that belongs explicitly to an LTE network and manages mobility of a UE. Ex. B, '268 patent at 1:23-47 (“A Long Term Evolution (LTE) radio core network includes a Mobility Management Entity

(MME).”); Ex. C, ’261 patent at 1:26-32 (“A core network of a [LTE] wireless network includes an MME.”). Both the ’268 and ’261 patents are expressly directed to LTE networks. ’261 Patent at 2:1-9 (noting the lack of security capability negotiation methods for UEs moving from a 2G or 3G network to an LTE network); ’268 Patent at 1:57-62 (noting the lack of security capability negotiation methods for UEs moving from an LTE network to a 2G or 3G network). Thus, reference to an “MME” in the asserted patent is unambiguously intend to be interpreted as a particular component in an LTE system. Huawei’s proposed construction reflects this intent.

There is no indication that the ’261 and ’268 patents intended to use “mobility management entity (MME)” to refer to anything other than the LTE entity of the same name. In fact, Defendants’ invalidity contentions admit that the ’268 patent characterizes a SGSN as “a 3G counterpart to an MME.” Ex. H, Invalidity Contentions Ex. B-02 at 1 (emphasis added). The words “counterpart to” show that the patentee used “MME” in its well-understood sense – as a node in an LTE network. If the patent used the term “MME” in the generic sense as Defendants now propose, the patent simply would have instead stated that a “SGSN” *is* “a MME” operating in a 3G network. Further, Defendants’ generic interpretation is incompatible with the remainder of the ’268 and ’261 patents, which clearly describe these components as distinct entities. *See, e.g.*, ’268 Patent at 4:9-11 (describing an embodiment where the “3G SGSN obtains the AV-related keys from the MME directly”); *id.* at 5:16-17 (describing an embodiment where the “3G SGSN obtains a root key from the MME”); ’261 Patent at 7:18-31 (“[T]he MME . . . sends a context request message to an SGSN.”); *id.* at 8:43-53 (“[T]he MME acquires an NAS security algorithm supported by the UE from an SGSN through mobility management context request and response messages.”).

Finally, Defendants’ proposed construction adds no clarity to the meaning of the term. Defendants’ proposed construction merely reorders the original term’s words and replaces “entity” with “server.” Rearranging the words “mobility” and “management” adds nothing to the meaning of the term and replacing the word “entity” with “server” lacks any basis. The term uses the word “entity” in its name and that is how it is referenced in the patent, among persons of skill in the field, and in the corresponding 3GPP standards. Replacing “entity” with “server” simply introduces ambiguity where none exists. Thus, this Court should reject Defendants’ proposed construction and adopt Huawei’s construction.

IV. Disputed Terms and Proposed Constructions of the ’268 Patent

| Asserted Claims | Term | Huawei’s Construction | Defendants’ Construction |
|------------------------|---|------------------------------|---------------------------------|
| Claims 1, 2, 3 | “wherein the mobility management context comprises information for determining security capacities supported by the UE and authentication vector (AV)-related keys [that are deduced according to a root key of the MME]” | Plain meaning | Indefinite |

Huawei submits that the language of this claim term is clear on its face and consistent with the ’268 specification. Both “AV-related keys” and a “root key” are standard, well-defined telecommunication terms. Huawei will not speculate as to Defendants’ theory as to why this claim term is indefinite, but will respond in its reply brief should a response be necessary. *See* Ex. I, T-Mobile & NSN’s P.R. 3-3 Invalidity contentions at 217 (providing conclusory assertion that this phrase “fails to particularly point out and distinctly claim the invention.”).

| Asserted Claims | Term | Huawei’s Construction | Defendants’ Construction |
|------------------------|---------------------------|---|---|
| Claim 2 | “a receiver configured to | Not subject to 112 ¶ 6 – plain meaning. | Indefinite for failure to disclose structure. |

| | | | |
|---------|--|---|--|
| | receive a context request for requesting a mobility management context sent by a serving GPRS support node (SGSN) in a second or third generation (2G/3G) network according to a routing area update (RAU) request from a user equipment (UE) in an idle mode” | <p>If the Court determines this term is subject to 112 ¶ 6:</p> <p>Function: receiving a context request for requesting a mobility management context sent by a serving GPRS support node (SGSN) in a second or third generation (2G/3G) network according to a routing area update (RAU) request from a user equipment (UE) in an idle mode</p> <p>Structure: MME receiver and equivalents thereof</p> | <p>Function: receive a context request for requesting a mobility management context sent by a serving GPRS support node (SGSN) in a second or third generation (2G/3G) network according to a routing area update (RAU) request from a user equipment (UE) in an idle mode</p> <p>Structure: No corresponding structure disclosed.</p> |
| Claim 2 | “a processor configured to deduce authentication vector (AV)-related keys according to a root key of the MME” | <p>Not subject to 112 ¶ 6 – plain meaning.</p> <p>If the Court determines this term is subject to 112 ¶ 6:</p> <p>Function: deducing authentication vector (AV)-related keys according to a root key of the MME</p> <p>Structure: MME processor and equivalents thereof</p> | <p>Indefinite for failure to disclose structure.</p> <p>Function: to deduce authentication vector-related keys according to a root key of the MME</p> <p>Structure: No corresponding structure disclosed.</p> |
| Claim 2 | “a transmitter configured to send the mobility management context to the SGSN” | <p>Not subject to 112 ¶ 6 – plain meaning.</p> <p>If the Court determines this term is subject to 112 ¶ 6:</p> <p>Function: sending the mobility management context to the SGSN</p> <p>Structure: MME transmitter and equivalents thereof</p> | <p>Indefinite for failure to disclose structure.</p> <p>Function: to send the mobility management context to the SGSN</p> <p>Structure: No corresponding structure disclosed.</p> |

Consistent with this Court’s precedent, the claimed “configured to” terms in the ’268 Patent should be construed according to their plain meaning and are not subject to construction under 35 U.S.C. § 112, ¶ 6. At the outset, none of these terms use the “means for” language, and thus, they are presumptively not subject to § 112, ¶ 6 construction. *See Personalized Media*, 161 F.3d at 704; *see also Uniloc USA, Inc. v. Autodesk, Inc.*, No. 2:15-CV-1187-JRG-RSP, 2016 WL 3647977, at *5 (E.D. Tex. July 7, 2016) (“There is a rebuttable presumption that § 112, ¶ 6 applies when the claim language includes ‘means’ or ‘step for’ terms, and that it does not apply in the absence of those terms.”). The burden of rebutting that presumption falls on Defendants. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc). In particular, under *Williamson*, the presumption can only be rebutted if the claim term fails to “‘recite[] sufficiently definite structure’ or else recites function without reciting sufficient structure for performing that structure.” *Id.* (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)). Defendants cannot overcome the legal presumption because “the claim language, read in light of the specification, recites sufficiently definite structure” for these apparatus claims. *Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1372 (Fed. Cir. 2015) (quoting *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094, 1099 (Fed. Cir. 2014)).

Rather than being means-plus-function limitations, each of these terms use simple, well-understood terms in the networking and communications arts, such as a “receiver,” “processor,” and “transmitter,” and additionally include clauses that further define the structure of the device by identifying how it is configured. The terms are described as being structurally within a larger network component (such as a MME or SGSN) that must include those structures to achieve their purpose. In short, Defendants cannot overcome the legal presumption against § 112, ¶ 6

construction and therefore each of these terms should be given its plain meaning in the art. *See Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 704 (Fed. Cir. 1998). The claim terms at issue are all of a similar form and should be considered together.

“Where a claim term has an understood meaning in the art, it recites sufficient structure.” *Chrimar Sys., Inc. v. Adtran, Inc.*, No. 6:15-CV-618-JRG-JDL, 2016 WL 3382028, at *9 (E.D. Tex. June 20, 2016). Such is the case here. A “receiver,” “processor,” and “transmitter” each have a recognizable structure to persons of ordinary skill in the art. Each of these terms was well-known to laypersons as well.⁷

With respect to the “processor” claim term, a recent case before this Court is particularly informative. In *Cellular Communications Equipment LLC, v. AT&T, Inc.*, the Court extensively considered whether “a processor configured to generate a request for providing aperiodic channel information with respect to a selected downlink component carrier of a plurality of component carriers” qualified for Section 112, ¶ 6 treatment under *Williamson* and concluded that it did not. Case No. 2:15-CV-576-RWS-RSP (E.D. Tex. Dec. 19, 2016) (Payne, J.).

The “receiver” and “transmitter” claim terms fare similarly well under case law. Where a would-be functional limitation recites relatively simple functions, such as transmitting or receiving, little disclosure is needed to apprise the public of the structure that corresponds to that function. *See In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011) (“Absent a possible narrower construction of the terms ‘processing,’ ‘receiving,’ and ‘storing,’ discussed below, those functions can be achieved by any general purpose computer.”).

⁷ Ex. J, Shorter Oxford English Dictionary (5th ed. 2002) (definition of “receiver”); Ex. L, American Heritage College Dictionary (4th ed. 2002) (definition of “processor”); Ex. K, Webster’s II New College Dictionary (3rd ed. 2005) (definition of “processor”); Ex. J, Shorter Oxford English Dictionary (5th ed. 2002) (definition of “transmitter”).

Should this Court nevertheless find these terms governed by Section 112, ¶ 6, these terms have corresponding structure. The specification links the MME to each of the recited function. *See, e.g.*, '268 Patent at 4:24-29 (“[T]he 3G SGSN sends a mobility management context request to the MME.”); *id.* at 4:29-30 (“The MME deduces the AV-related keys . . . according to its own root key.”); *id.* at 4:35-36 (“[T]he MME returns a mobility management context response that carries the AV-related keys to the 3G SGSN.”).

V. Disputed Terms and Proposed Constructions of the '261 Patent

| Asserted Claims | Term | Huawei's Construction | Defendants' Construction |
|-----------------|----------|-----------------------|--|
| Claims 1, 17 | Preamble | Preamble is limiting | Claim 1: Preamble is limiting but does not require all recited steps be performed by the MME Claim 17: Preamble is not limiting |

Generally, preamble language is considered limiting if the language is “necessary to give life, meaning, and vitality to the claim.” *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). Although “no litmus test defines when a preamble limits claim scope” various factors, which are present here, indicate that the preamble is limiting.

First, where the preamble terminology provides antecedent basis for the claim body, it is likely limiting. The claim 1 and 17 preambles recite both the actor and acts that lie at the heart of this patent: an LTE network MME that negotiates security during idle state mobility. *See* Ex. C, '261 Patent at Abstract. That actor provides antecedent basis to the claim 1 body. *Id.* at 11:57-60 (“transmitting . . . to *the* MME”); *id.* at 13:17 (“wherein the MME is in *the* LTE network”).

Second, “when the preamble is essential to understand limitations or terms in the claim body, the preamble limits claim scope.” *Catalina Mktg.*, 289 F.3d at 808. Defendants complain that “it is unclear which components are responsible for the ‘transmitting,’ ‘receiving,’

‘selecting,’ ‘sending,’ and ‘deriving’ steps recited in claim 1. Ex. I, T-Mobile & NSN P.R. 3-3 Invalidity Contentions at 220. Defendants, however, cannot ignore the words of the claim—merely because they appear in the preamble. Interpreting the preamble as limiting makes plain that the MME is used for security negotiation for idle state mobility. Accordingly, construing the preamble as limiting removes any potential ambiguity by requiring the “receiving,” “selecting,” “sending,” and “deriving” steps to be performed by the MME and the “transmitting” step to result in a transmission to the MME.

Third, the patent specification highlights the significance of the preamble language and confirms it limits the claim. *Catalina Mktg.*, 289 F.3d at 808 (“when reciting additional structure or steps underscored as important by the specification, the preamble may operate as a claim limitation”). The ’261 specification repeatedly confirms that it is directed an innovative procedure whereby an LTE network MME enables security negotiation. *See* ’261 Patent at Abstract (“An MME negotiates security in case of idle state mobility for a UE from a first network to a LTE network.”); *id.* at 2:21-23 (“The present invention is further directed to an MME, so that when moving from a 2G/3G network to an LTE network, a UE in an idle state can negotiate a security capability.”). The specification further confirms that various steps are performed by the MME. *Id.* at 3:32-64.

The ’261 patent prosecution history removes any doubt about the import of the claim preambles. As originally filed, the “receiving,” “selecting,” “sending,” and “deriving” steps of claim 1 each were limited to something being done “by the MME.” Ex. M, June 12, 2014 filing at 20. The applicant later amended the claims so that limitation appeared in the claim preamble, rather than body. Ex. M, May 18, 2015 Response to Office Action at 3. But, the applicant did not suggest that this amendment changed the claim scope. *Id.* at 12-16.

| Asserted Claims | Term | Huawei's Construction | Defendants' Construction |
|-----------------|---|---|--|
| Claim 1, 9, 17 | "[deriving/derives] a NAS protection key with the selected NAS security algorithm from the authentication vector-related key" | "[deriving/derives] a NAS protection key using the authentication vector-related key and the selected NAS security algorithm" | "[deriving/derives] a NAS protection key [by the UE] ⁸ using the authentication vector-related key CK and/or IK as an input to the selected NAS security algorithm" |

The dispute over this claim term primarily turns on one issue: whether an authentication vector-related key (hereinafter "AV-key") is input to the selected NAS security algorithm to derive the NAS protection key, as Defendants contend. This interpretation is entirely inconsistent with the specification, and for that reason, should be rejected.

The specification describes (1) the AV-key and (2) the selected security algorithm as *inputs* to a "derivation method" to produce the NAS protection key. It identifies the selected security algorithm as the "NAS confidentiality protection algorithm" and "NAS integrity protection algorithm"; the root key as " K_{asme} "; the AV-key as encryption key "CK" and integrity key "IK"; and describes the NAS protection key as including "NAS integrity protection key $K_{nas-int}$ and/or an NAS confidentiality protection key $K_{NAS-enc}$." Ex. C, '261 Patent at 5:10-12, 5:24-31, 5:36-38.

Using these abbreviations, the patent first teaches that CK and IK can be used to derive K_{asme} . *Id.* at 5:36-38. Then, column 6, line 55 through column 7, line 3 teaches using a "derivation method" to derive the confidentiality protection key— $K_{nas-enc} = f(K_{asme}, NAS$

⁸ Defendants propose that "by the UE" further limit the "deriving . . ." claim 1 term. This additional limitation is ambiguous and unjustified. Should Defendants elaborate on this issue in their responsive brief, Huawei will respond in kind.

confidentiality protection algorithm, other parameters)—and a function for deriving the integrity protection key— $K_{nas-int} = f(K_{asme}, \text{NAS integrity protection algorithm, other parameters})$.⁹ The patent thus unequivocally teaches that the selected algorithm and AV-key are input to a function to derive the NAS protection key. After the recited security negotiation procedure concludes, the UE and network later use the NAS protection keys as inputs to the security algorithm to encrypt and/or provide integrity protection to messages passed between them. *Id.* at 3:58-64, 15:17-28.

Defendants’ proposed construction finds no support in intrinsic evidence. The patent never describes the MME as deriving NAS protection keys *using AV-keys as inputs to the selected NAS security algorithm*. Instead, the patent describes deriving NAS protection keys *using the selected NAS security algorithm as an input to the derivation method*. *Id.* at 6:60-7:3 (teaching that a “derivation method”—not the selected NAS security algorithm—is used to derive NAS protection keys). Thus, Defendants’ interpretation cannot be correct because it directly contradicts the ’261 patent specification.

| Asserted Claims | Term | Huawei’s Construction | Defendants’ Construction |
|-----------------|---|-----------------------|---|
| Claim 17 | “communications system that provides security negotiation for idle state mobility from a first network to a long term evolution (“LTE”) network . . . wherein the MME is in the LTE network and selects a NAS security algorithm supported by the NAS security capabilities of the UE, sends a message that indicates the selected NAS security algorithm to the UE, and derives a NAS protection key with the selected NAS | Plain meaning | Indefinite / incapable of construction. |

⁹ A function is a mathematical concept that associates one or more inputs with a unique output. Typically, a function defines a series of operations that are performed on the input(s) to produce the output. The notation $f(x)$ is commonly used to identify a function, where “x” is the input. Multiple inputs can be represented with the notation $f(x,y)$, $f(x,y,z)$, and so forth. For example, when “2” is input to the function $f(x) = x + 2$, the output is “4.”

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| | security algorithm from the authentication vector-related key.” | | |
|--|---|--|--|

Defendants incorrectly allege that this claim term represents mixed method and apparatus elements and that claim 17 of the '261 patent are therefore indefinite under *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377 (Fed. Cir. 2005). Ex. I, T-Mobile & NSN P.R. 3-3 Invalidity Contentions at 218. As explained in *IPXL*, functionally claimed apparatus elements are proper¹⁰ unless infringement occurs only when the device is used in a particular manner as opposed to infringement occurring upon the sale, use, or manufacture of the apparatus, as would be the case with a proper apparatus claim. *See IPXL*, 430 F.3d at 1384 (holding that “a single claim covering both an apparatus and a method of use of that apparatus” is indefinite because “it is unclear whether infringement ... occurs when one creates a[n infringing] system, or whether infringement occurs when the user actually uses [the system in an infringing manner].”). In this case, the apparatus claim leaves no ambiguity.

Here, the claim specifically recites a communications system that *inter alia* includes an MME, which “selects a NAS security algorithm supported by the NAS security capabilities of the UE, sends a message that indicates the selected NAS security algorithm to the UE, and derives a NAS protection key with the selected NAS security algorithm from the authentication vector-related key.” The “wherein” clause at issue describes the structure of the claimed MME in terms of the actions that the MME must be capable of performing when it is part of the

¹⁰ Reciting structural apparatus claim elements by describing what the apparatus does has long been held proper. It is well established that “[a] patent application is free to recite features of an apparatus either structurally or functionally.” *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997); *see In re Swinehart*, 439 F.2d 210, 212 (C.C.P.A. 1971) (“[T]here is nothing intrinsically wrong with [defining something by what it does rather than what it is] in drafting patent claims.”); *see also Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1375 (Fed. Cir. 2008) (“apparatus claims are not necessarily indefinite for using functional language”).

claimed system. In other words, “[u]nlike *IPXL* and similar cases, the claim at issue here makes clear that the “select[ing],” “send[ing],” and “deriv[ing]” limitations reflect the capability of that structure rather than the activities of the user.” See *UltimatePointer, L.L.C. v. Nintendo Co.*, 816 F.3d 816, 827 (Fed. Cir. 2016). Infringement of these claims occurs as soon as an apparatus is made, used, or sold (or offered for sale) with the ability to create the claimed tunnel.

Importantly, Federal Circuit cases make clear that even the use of an active verb does not turn the claim into an improper mixed method/apparatus claim. The *UltimatePointer* claim used an active verb, and the Court expressly rejected the defendant’s *IPXL* challenge. See *id.* at 819. There, the claim recited: “An apparatus for controlling a feature on a computer generated image, the apparatus comprising: a handheld device including: an image sensor, said image sensor *generating data. . .*” *Id.* at 819. Despite ostensibly claiming “[a]n apparatus” that must be “generating data” – *i.e.*, an element recited using an active verb tense – the Federal Circuit found the claim not indefinite. See *id.* at 827. Just like the element at issue here, the Court found the element was a functionally recited apparatus element and not a method step. In reaching its decision, the Federal Circuit cited to its own prior holding in *MEC* that found that “a claim directed to a computer processor with different stages, including ‘performing a boolean algebraic evaluation,’ ‘producing an enable-write,’ later ‘enabling’ or ‘disabling,’ and, at a different stage, ‘determining,’” each of which was recited with an active verb tense, was not indefinite. See *id.* (quoting *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1371-72 (Fed. Cir. 2008)). The court also cited *HTC*, which likewise found that a claim “drawn to a mobile station for use with a network” that recited “‘storing,’ ‘holding,’ and other functional limitations” not indefinite. See *id.* (citing *HTC Corp.*). If the active verbs used

in the claims at issue in *UltimatePointer*, *MEC*, and *HTC* passed the Federal Circuit’s scrutiny, then certainly the claim language here easily passes muster.

| Asserted Claims | Term | Huawei’s Construction | Defendants’ Construction |
|-----------------|--|---|---|
| Claim 9 | “an acquisition module that receives from a user equipment (UE) security capabilities of the UE including non-access stratum (NAS) security capabilities of the UE” | <p>Not subject to 112 ¶ 6 – plain meaning.</p> <p>If the Court determines this term is subject to 112 ¶ 6:</p> <p>Function: receiving from a user equipment (UE) security capabilities of the UE including non-access stratum (NAS) security capabilities of the UE</p> <p>Structure: Acquisition module (Fig. 4) in a MME and equivalents thereof</p> | <p>Indefinite for failure to disclose structure.</p> <p>Function: receive from a user equipment (UE) security capabilities of the UE including non-access stratum (NAS) security capabilities of the UE</p> <p>Structure: No corresponding structure disclosed.</p> |
| Claim 9 | “a selection module that selects a NAS security algorithm supported by the NAS security capabilities of the UE and sends a message that indicates the selected NAS security algorithm to the UE” | <p>Not subject to 112 ¶ 6 – plain meaning.</p> <p>If the Court determines this term is subject to 112 ¶ 6:</p> <p>Function: selecting a NAS security algorithm supported by the NAS security capabilities of the UE and sends a message that indicates the selected NAS security algorithm to the UE</p> <p>Structure: Selection module (Fig. 4) in a MME and equivalents thereof</p> | <p>Indefinite for failure to disclose structure.</p> <p>Function: to select a NAS security algorithm supported by the NAS security capabilities of the UE and send a message that indicates the selected NAS security algorithm to the UE</p> <p>Structure: No corresponding structure disclosed.</p> |
| Claim 9 | “a key derivation module that derives a NAS protection key with the selected NAS security | <p>Not subject to 112 ¶ 6 – plain meaning.</p> <p>If the Court determines this term is subject to 112 ¶ 6:</p> <p>Function: deriving a NAS protection key using the</p> | <p>Indefinite for failure to disclose structure.</p> <p>Function: to derive a NAS protection key with the selected NAS security algorithm from the</p> |

| | | | |
|--|---|--|--|
| | algorithm from the authentication vector-related key” | authentication vector-related key and the selected NAS security algorithm Structure: Key derivation module (Fig. 4) in a MME and equivalents thereof | authentication vector-related key Structure: No corresponding structure disclosed. |
|--|---|--|--|

None of the above claim terms that recite a module should be interpreted as means-plus-function limitations, and even if they were, they would not be indefinite because the specification discloses corresponding structure. Although *Williamson* found that “module” is a “nonce” word that generally does not connote structure, it also observed that “the presence of modifiers can change the meaning of ‘module’” so as to connote structure. *Williamson*, 792 F.3d at 1350-51. Further, “the claim [can] describe how the [device] ***interacts with other components*** . . . in a way that might inform the structural character of the limitation-in-question or otherwise impart structure to the [device] as recited in the claim.” *Id.* (emphasis added). Indeed, this Court has already considered a claim with the term “redundancy version signaling module configured to detect start of a system information message transmission window and to assign a redundancy version sequence at the start of the transmission window” and found that the claim “itself recites structure in the form of operations and algorithms” such that it was not governed by Section 112, ¶ 6. *Cellular Commc’ns Equip. LLC v. AT&T, Inc.*, No. 2:15-CV-576-RWS-RSP, 2016 WL 7364266, at *20 (E.D. Tex. Dec. 19, 2016). The Court found that “nearly the entirety of the claim provides structural meaning to the ‘redundancy version signaling module’” and, therefore, the defendants failed to overcome the presumption against means-plus-function treatment.

Such is the case here. Each of the disputed claim terms contain phrases that modify the otherwise nonce word “module,” and describe how the particularized modules “interact[] with other components” in the ’261 invention. The first claim term refers to an “acquisition” module,

and the remainder of the term explains that acquisition is accomplished by receiving UE security capabilities, which include NAS security capabilities, from a UE. The second claim term refers to a “selection” module, and the remainder of the term explains that selection is accomplished by selecting a NAS security algorithm supported by the UE and that this selection module sends a message indicating the selected NAS security algorithm to the UE. The third claim term refers to a “key derivation module” that uses an AV-related key to derive a NAS protection key with the selected NAS security algorithm. This language describes the structural character of the claimed modules. Further, these disputed claim terms are constrained to reside in a mobility management entity (MME) – a well-defined structure, as discussed in the section addressing this claim term above. Ex. C, ’261 Patent at 12:45-48.

To the extent this Court finds that these claim terms are in fact governed by 35 U.S.C. § 112, ¶ 6, the ’261 patent specification discloses sufficiently definite structure corresponding to each recited function. As a threshold matter, aside from an irrelevant difference between verb tense, Huawei’s proposed alternative functions for the “acquisition module” and “selection module” claims are the same as the functions identified by Defendants. The proposed functions for the “key derivation module” are largely the same, except that Huawei’s function tracks its proposed construction of the “deriving a NAS protection key” step for consistency.

Each of these proposed constructions finds corresponding structure in the specification. Figure 4 of the ’261 patent plainly depicts the “acquisition module,” “selection module,” and “key derivation module” within the MME. The specification describes the recited functions and clearly links them to elements depicted in Figure 4. *Id.* at 2:59-3:8, 10:6-54.

VI. CONCLUSION

For the foregoing reasons, Huawei respectfully requests that its positions be adopted.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the above and foregoing document has been served on January 20, 2017 to all counsel of record who are deemed to have consented to electronic service via the Court's CM/ECF system per Local Rule CV-5(a)(3).

/s/ David Barkan

David Barkan